



Disk-Array Processor Enclosure (DPE) Upgrade From Model FC 55XX/57XX to Model FC 45XX

Installation Guide

P/N 014002956-03

This document explains how to upgrade a Model 5600/5700 or 5400/5500 disk-array processor enclosure (DPE) to a Model 4500 DPE by replacing its storage processors (SPs), and by loading an upgrade revision and a new revision of Core Software (previously known as Licensed Internal Code, LIC).

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The procedure described in this document is to be performed by an authorized EMC service provider only.

Requirements

- The DPE to upgrade, and each connected DAE enclosure, must have two LCCs. (The upgrade assembly includes two Model 4400 SPs and two 800-watt SPS units.)
- If you want to upgrade to shared storage with the Access Logix™ option, you must have ordered the Access Logix option. Access Logix Core Software ships on its own CD-ROM.
- Shared storage with Access Logix requires two Fibre Channel switches.
- You must have the latest Interface kit to provide required revisions of Navisphere Agent/CLI and ATF (Application Transparent Failover).
- The operating system disk, Navisphere® Agent, and Navisphere Manager cannot reside on the storage system being upgraded; that is, there must be a system disk independent of the storage system.
- The Core Software for Model 4400 SPs does not support disks with part number 005-44614 or 005-44299. (These are Seagate ST19171FC 9-Gbyte half-height disks.) If the storage system you want to convert has any such disks, replace them with a supported model before starting the upgrade. The new Core Software will not recognize and power up any such disks. To verify the disk model, stop and prevent I/O to the storage system, and then remove one disk at a time and read the part number label on the side of the disk carrier. Then reinsert the disk.
- If the DPE to upgrade is connected to a server running HP/UX and it is either any FC54XX/55XX or it is an FC56XX/FC57XX that uses Core Software earlier than version 5.11.08, then the hardware paths to the LUNs must have been redefined. The paths must be redefined because the newer version of Core Software you will install supports more than eight LUNs with HP-UX. The procedure for redefining the paths to LUNs with HP/UX is explained in CLARiiON support note S000309A.

Table 1 Minimum revisions of Core Software and Navisphere

	SP	Model	Part Number	Core Software revisions
Upgrade CD-ROM	Old	5400	005-045189	2.04.26
		5600	118-027130	5.11.08
	New	4400	118-030563	5.32.XX
Access Logix CD-ROM	New	n/a	068-090454	6.32.XX
	Navisphere software		Minimum revision	
Interface kit CD-ROMs	Agent/CLI, ATF, HBA drivers			4.2.2
	CLARAlert event monitor			
Other CD-ROM	Manager or Supervisor			

For the latest revision information, consult the Open Systems Support Matrix, accessible through URL www.cs.isus.emc.com/csweb2/index.htm.

Upgrade Procedure

If you are upgrading from a Model 5600/5700 with Core Software 4.xx or Model 5400/5500 SP (with Core Software 2.XX), be aware that Core Software 2.XX and 4.XX do not support the feature known as RAID groups. The RAID group feature lets you create more than one LUN on any group of disks bound together as a RAID group.

The Core Software that runs on Model 4400 SPs *does* support RAID groups, which means that the upgrade will automatically create a RAID group for any LUN bound on Core Software 4.XX or 2.XX. The new RAID group-to-LUN relationship will be the same as the old one. After the upgrade, when you want to examine or manage any LUN using Navisphere, you must access the RAID Groups dialog to find the LUN.

If you are upgrading from Model 5600/5700 with Core Software 5.XX, your RAID group and LUN structure will not be affected by the upgrade.

The upgrade does not require unbinding of LUNs in the storage system. However, as a precaution, you may want to back up the information on all LUNs before starting the upgrade.

1. Verify that you have the correct CD-ROMs with the required revisions of Core Software and Navisphere products (shown in the table above).
2. If the server is not running the minimum revision of Navisphere products, ATF, and HBA drivers (shown in the table above), load the new products from CD-ROM as explained in the server setup manual.
3. Stop and prevent all I/O and let all processes complete.
4. Use Navisphere Manager to disable the read cache on each SP and disable the write cache.
5. Set read cache memory size to zero.
6. Set write cache memory size to zero.
7. If the DPE is running the minimum revision of Core Software (shown as "Old" in the previous table), skip to step 11.

8. If the DPE is *not* running the minimum revision of Core Software, then use Navisphere to download the minimum revision from the CD-ROM in the upgrade kit.

Make sure the **Auto Reboot** option is selected.

9. The minimum revision of Core Software downloads to the database drives and the storage system restarts. Ignore any polling error messages that say "Requested RAID Group does not exist." Wait until the disk lights stop flashing.
10. In the next step, make sure the **Auto Reboot** option is *not* selected.
11. Using Navisphere Manager, with the **Auto Reboot** option not selected, download the upgrade revision of Core Software (revision 5.3X or 6.3X) from the upgrade CD-ROM.
12. The upgrade revision of Core Software downloads to database drive 0.
13. Stop Navisphere Manager and the Agent.
14. Power off the DPE enclosure.
15. Label and disconnect all cables connected to the SP(s).
16. Remove the old SP(s) from the DPE enclosure.
17. On the Model 4400 SPs, install the correct memory DIMMs. Be sure to use proper anti-static (ESD control) procedures when you install the DIMMs.

Do not move memory DIMMs from a Model 5600 or 5400 SP to a Model 4400 SP. The DIMMs are not compatible.

- a. Place the SP and the memory modules (DIMMs) on a static-free work surface.
- b. On the SP, install the DIMMs in the appropriate connectors as shown next.

A memory module has a notch on its edge near pin 1 so that you can insert it only one way. Install memory modules one at a time and in order starting with connectors 1 and 3 (refer to Figure 1 following).

- A. Lift the module out of its antistatic packaging and place the module into the connector.
- B. Ensure that the alignment notch is correctly oriented.
- C. Use your fingers to push out on the locking tabs, and use your thumbs to push the module in until seated. Then engage the tabs.

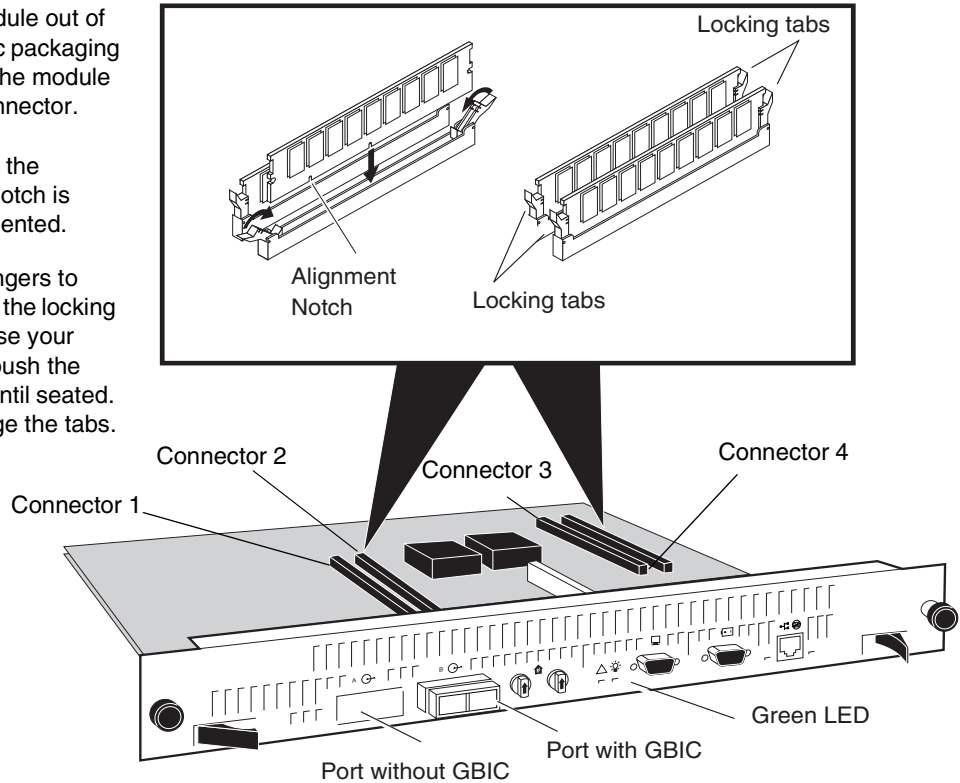


Figure 1 DIMM and GBIC positions on a Model FC 4400 SP

18. If any of the two Fibre Channel ports on an SP does not have an optical GBIC (gigabit interface converter), then insert a GBIC in that port. The figure above shows a port with and without a GBIC. You can find GBICs in the Upgrade kit.
19. Install the new Model 4400 SPs.
20. Remove any existing SPS units and insert the new SPS units from the upgrade kit. Removing, inserting, and cabling SPS units is explained in the manual *CLARiiON DC Power Supply Installation and Replacement*, part number 014002887. Then return here.

After installing and cabling the SPS units, power up the DPE chassis.

The new SPs boot the new Core Software from database drive 0 and then copy the software to database drives 1 and 2. The LEDs

on the drives flicker as the copy occurs. SP PROM code is updated at this time. Wait for all drives to become ready (disk-drive ready lights on).

21. Verify that the status LED on the front of each SP shows normal green (not amber).

You have finished the storage-system part of the upgrade. The next steps involve server hardware.

22. If you are upgrading to a shared storage system with Access Logix (Core Software 6.32.02), go to the shared storage installation and service manual, 014002737.

If you are upgrading without Access Logix (Core Software 5.32.00), go to the direct attach installation manual, 014002967.

If the customer and sales representative agreed that the customer would return the old SPs (that is, the old SPs are listed as line items on the Sales Order Worksheet), then you can arrange to return the old SPs to EMC. You can either ship the old SPs by Federal Express (for two or four SPs), or call the sales organization to have the Sales RMA (Return Materials Authorization) group pick up the old SPs (for many SPs).

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